

## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. 2002-NM-294-AD; Amendment 39-13820; AD 2004-20-15]**

**RIN 2120-AA64**

### **Airworthiness Directives; Dornier Model 328-100 Series Airplanes**

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Final rule.

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**SUMMARY:** This amendment supersedes an existing airworthiness directive (AD), applicable to all Dornier Model 328-100 series airplanes, that currently requires certain revisions to the airplane flight manual, replacement of certain de-icing boots in the air intake duct assemblies of the engine with re-designed units, repetitive inspections of the boots to find discrepancies, and corrective action if necessary. This amendment also requires modification of the engine air inlet de-icing system. This action extends the repetitive inspection interval required by the existing AD, and adds repetitive debonding/delamination and leakage inspections of the de-icing boots, and corrective action if necessary. Initiation of the extended repetitive inspections and new repetitive inspections ends the repetitive inspections required by the existing AD. The actions specified by this AD are intended to prevent engine malfunction due to failure of the engine air inlet de-icing system, which could result in reduced controllability of the airplane. This action is intended to address the identified unsafe condition.

**DATES:** Effective November 17, 2004.

The incorporation by reference of certain publications, as listed in the regulations, is approved by the Director of the Federal Register as of November 17, 2004.

The incorporation by reference of certain other publications, as listed in the regulations, was approved previously by the Director of the Federal Register as of April 6, 1995 (60 FR 15037, March 22, 1995).

**ADDRESSES:** The service information referenced in this AD may be obtained from AvCraft Aerospace GmbH, P.O. Box 1103, D-82230 Wessling, Germany. This information may be examined at the Federal Aviation Administration (FAA), Transport Airplane Directorate, Rules Docket, 1601 Lind Avenue, SW., Renton, Washington; or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741-6030, or go to: [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

**FOR FURTHER INFORMATION CONTACT:** Tom Groves, Aerospace Engineer, International Branch, ANM-116, FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 227-1503; fax (425) 227-1149.

**SUPPLEMENTARY INFORMATION:** A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) by superseding AD 95-04-51, amendment 39-9179 (60 FR 15037, March 22, 1995), which is applicable to all Dornier Model 328-100 series airplanes, was published in the Federal Register on April 1, 2004 (69 FR 17097). The action proposed to continue to require the revisions to the AFM, replacement of certain de-icing boots in the air intake duct assemblies of the engine with re-designed units, and repetitive inspections of the boots to find discrepancies, and corrective action if necessary. The action also would require modification of the engine air inlet de-icing system, and would add a new AFM revision which changes the compliance time for the functional test required by the existing AD. The proposed action would extend the repetitive inspection interval required by the existing AD, and would add repetitive debonding/delamination and leakage inspections of the de-icing boots, and corrective action if necessary. Initiation of the extended repetitive inspections and new repetitive inspections would end the repetitive inspections required by the existing AD.

## **Comments**

We provided the public the opportunity to participate in the development of this AD. No comments have been submitted in response to the proposed AD or on the determination of the cost to the public.

## **Conclusion**

We have determined that air safety and the public interest require the adoption of the AD as proposed.

## **Clarification of Inspection**

We have updated the definition of the detailed inspection in Note 1 of the AD to reflect our current definition.

## **Cost Impact**

There are about 53 airplanes of U.S. registry that will be affected by this AD.

The AFM revision currently required by AD 95-04-51 takes about 1 work hour per airplane to accomplish, at an average labor rate of \$65 per work hour. Based on these figures, the cost impact of the currently required AFM revision is estimated to be \$65 per airplane.

The inspections currently required by AD 95-04-51 take about 1 work hour per airplane to accomplish, at an average labor rate of \$65 per work hour. Based on these figures, the cost impact of the currently required inspections is estimated to be \$65 per airplane, per inspection cycle.

The replacement currently required by AD 95-04-51 takes about 5 work hours per airplane to accomplish, at an average labor rate of \$65 per work hour. Required parts will cost about \$55,000 per airplane. Based on these figures, the cost impact of the currently required replacement is estimated to be \$55,325 per airplane.

The modification required in this AD action will take about 10 work hours per airplane to accomplish, at an average labor rate of \$65 per work hour. Required parts will be free of charge. Based on these figures, the cost impact of the required modification on U.S. operators is estimated to be \$34,450, or \$650 per airplane.

The inspection/debonding/delamination and leakage inspection required in this AD action will take about 1 work hour per airplane to accomplish, at an average labor rate of \$65 per work hour. Based on these figures, the cost impact of the required inspection on U.S. operators is estimated to be \$3,445, or \$65 per airplane, per inspection cycle.

The cost impact figures discussed above are based on assumptions that no operator has yet accomplished any of the requirements of this AD action, and that no operator would accomplish those actions in the future if this AD were not adopted. The cost impact figures discussed in AD rulemaking actions represent only the time necessary to perform the specific actions actually required by the AD. These figures typically do not include incidental costs, such as the time required to gain access and close up, planning time, or time necessitated by other administrative actions.

## **Regulatory Impact**

The regulations adopted herein will not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained from the Rules Docket at the location provided under the caption "ADDRESSES."

## **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

## **Adoption of the Amendment**

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

### **PART 39—AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. Section 39.13 is amended by removing amendment 39-9179 (60 FR 15037, March 22, 1995), and by adding a new airworthiness directive (AD), amendment 39-13820, to read as follows:

# AIRWORTHINESS DIRECTIVE



Aircraft Certification Service  
Washington, DC

U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

*We post ADs on the internet at "www.faa.gov"*

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

**2004-20-15 Fairchild Dornier GmbH (Formerly Dornier Luftfahrt GmbH):** Amendment 39-13820. Docket 2002-NM-294-AD. Supersedes AD 95-04-51, Amendment 39-9179.

**Applicability:** All Model 328-100 series airplanes, certificated in any category.

**Compliance:** Required as indicated, unless accomplished previously.

To prevent engine malfunction due to failure of the engine air inlet de-icing system, which could result in reduced controllability of the airplane, accomplish the following:

## **Restatement of Certain Requirements of AD 95-04-01**

### **AFM Revision**

(a) For all airplanes: Within 24 hours after April 6, 1995 (the effective date of AD 95-04-51, amendment 39-9179), accomplish paragraphs (a)(1), (a)(2), and (a)(3) of this AD.

(1) Revise the Limitations Section of the FAA-approved Airplane Flight Manual (AFM) by inserting the following limitation in the AFM. This may be accomplished by inserting a copy of this AD in the AFM.

"During flight, if the 'ENG DEICE FAIL' electronic indication and caution advisory system (EICAS) annunciation activates for either engine, flight into known or forecast icing conditions is prohibited."

(2) Revise the Abnormal Procedures Section of the FAA-approved AFM by removing page 4, dated September 1, 1994, of section 04-12-00, and replacing it with the following. This may be accomplished by inserting a copy of this AD in the AFM.

"1. Icing Conditions—Exit immediately. If unable, land at nearest suitable airport."

(3) Revise the Limitations Section of the FAA-approved AFM to include the following functional test. This may be accomplished by inserting a copy of this AD in the AFM. Continue to do the functional test until the AFM revision required by paragraph (e) of this AD is done.

"Accomplish the following test at the applicable time specified as follows:

For airplanes equipped with air intake duct assemblies having de-icing boots with part numbers (P/Ns) 29S-5D5240-21, -23, and -25: As of 24 hours after the effective date of AD 95-04-51, accomplish the functional test prior to each flight.

For airplanes equipped with air intake duct assemblies having de-icing boots with P/Ns 29S-5D5240-211 (inlet lip), -231 (bypass duct), and -251 (aft ramp duct): Accomplish the functional test within 24 hours after the effective date of AD 95-04-51, and thereafter at daily intervals.

Perform a functional test of the de-icing system of the air intake ducts of the left and right engines to determine the condition of the system, in accordance with the procedures specified below. Flight crew or maintenance personnel shall perform this test.

## Functional Test of the De-Icing System

With engines running at idle power, display and monitor the 'ICE PROTECT' system page of the electronic indication and caution advisory system (EICAS), select left and right 'ENGINE INTAKE' pushbuttons in ('ON'), for a minimum of 60 seconds. Monitor system page for normal indications of one complete boot inflation and deflation cycle. Monitor EICAS for normal messages, and absence of 'ENG DEICE FAIL' caution.

After 60 seconds and observation of one complete inflation/deflation cycle, release 'ENGINE INTAKE' pushbuttons to out ('OFF') position, confirm absence of system page and EICAS cautions, and deselect 'ICE PROTECT' system page. At completion of check, 'ENGINE INTAKE' pushbuttons may be turned back on if required for departure.

If any EICAS 'ENG DEICE FAIL' annunciation is observed, or if system normal inflate and deflate cycling is not observed: The system shall be considered inoperative. Prior to further flight, the detailed visual and tactile inspections required by paragraph (b) of AD 95-04-51 must be accomplished.

If no discrepancy with the de-icing boots is found during these inspections, the de-icing system may be inoperative for a period of time not to exceed that specified in the DO-328 Master Minimum Equipment List (MMEL). Flight into known or forecast icing conditions is prohibited."

## Repetitive Inspections/Corrective Action

(b) For airplanes equipped with air intake duct assemblies having de-icing boots with part numbers (P/N) 29S-5D5240-21, -23, and -25: Accomplish paragraphs (b)(1) and (b)(2) of this AD at the times specified in those paragraphs.

(1) Within 24 hours after April 6, 1995: Perform a detailed inspection and a tactile inspection of the de-icing boots in the air intake ducts on the engines to find flat spots, softness, or other discrepancies, and to ensure that the edges of the de-icing boots are sealed properly, in accordance with Dornier Service Bulletin SB-328-30-020, dated March 17, 1994.

**Note 1:** For the purposes of this AD, a detailed inspection is: "An intensive examination of a specific item, installation, or assembly to detect damage, failure, or irregularity. Available lighting is normally supplemented with a direct source of good lighting at an intensity deemed appropriate. Inspection aids such as mirror, magnifying lenses, etc., may be necessary. Surface cleaning and elaborate procedures may be required."

(i) If no discrepancies are found and the edges of the de-icing boots are sealed properly (no debonding between the boot and the intake duct), repeat the detailed and tactile inspections required by paragraph (b)(1) of this AD thereafter at daily intervals until accomplishment of the modification required by paragraph (f) of this AD.

(ii) If any discrepancy is found, or if any edge of a de-icing boot is sealed improperly (debonding between the boots and the intake duct), prior to further flight, replace all three de-icing boots having P/Ns 29S-5D5240-21, -23, and -25, with three new units having P/Ns 29S-5D5240-211, -231, and -251, in accordance with the procedures specified in Dornier Alert Service Bulletin ASB-328-71-006, Revision 1, dated February 16, 1995.

(2) Within 5 days after April 6, 1995, replace all three de-icing boots having P/Ns 29S-5D5240-21, -23, and -25, with three new units having P/Ns 29S-5D5240-211, -231, and -251, in accordance with Dornier Alert Service Bulletin ASB-328-71-006, Revision 1, dated February 16, 1995. Following such replacement, perform the detailed and tactile inspections and the functional tests required by paragraphs (c) and (e) of this AD, respectively, in accordance with the times and procedures specified in those paragraphs.

(c) For airplanes equipped with air intake duct assemblies having de-icing boots with P/Ns 29S-5D5240-211, -231, and -251: Within 7 days after April 6, 1995, perform a detailed inspection and a tactile inspection of the de-icing boots in the air intake ducts on the engines to find flat spots, softness, or other discrepancies, and to ensure that the edges of the de-icing boots are sealed properly, in accordance with the procedures specified in Dornier Service Bulletin SB-328-30-020, dated March 17, 1994.

(1) If no discrepancies are found and the edges of the de-icing boots are sealed properly (no debonding between the boot and the intake duct): Repeat the detailed and tactile inspections required by paragraph (c) of this AD thereafter at intervals not to exceed 7 days until accomplishment of the modification required by paragraph (f) of this AD.

(2) If any discrepancy is found, or if any edge of a de-icing boot is sealed improperly (debonding between the boots and the intake duct): Prior to further flight, replace all three de-icing boots with three new units having P/Ns 29S-5D5240-211, -231, and -251, in accordance with Dornier Alert Service Bulletin ASB-328-71-006, Revision 1, dated February 16, 1995.

## **Parts Installation**

(d) As of April 6, 1995, no de-icing boot having P/N 29S-5D5240-21, -23, or -25 shall be installed on any airplane.

## **New Requirements of This AD**

### **AFM Revision**

(e) Within 24 hours after the effective date of this AD: Revise the Limitations Section of the AFM to include the following functional test. This may be accomplished by inserting a copy of this AD into the AFM. Accomplishment of this paragraph ends the requirements of paragraph (a)(3) of this AD, and the AFM revision required by that paragraph may be removed from the AFM.

"Accomplish the following test within 24 hours after the effective date of this AD. Repeat the test thereafter at daily intervals.

Perform a functional test of the de-icing system of the air intake ducts of the left and right engines to determine the condition of the system, in accordance with the procedures specified below. Flight crew or maintenance personnel shall perform this test.

### **Functional Test of the De-Icing System**

With engines running at idle power, display and monitor the 'ICE PROTECT' system page of the electronic indication and caution advisory system (EICAS), select left and right 'ENGINE INTAKE' pushbuttons in ('ON'), for a minimum of 60 seconds. Monitor system page for normal indications of one complete boot inflation and deflation cycle. Monitor EICAS for normal messages, and absence of 'ENG DEICE FAIL' caution.

After 60 seconds and observation of one complete inflation/deflation cycle, release 'ENGINE INTAKE' pushbuttons to out ('OFF') position, confirm absence of system page and EICAS cautions, and deselect 'ICE PROTECT' system page. At completion of check, 'ENGINE INTAKE' pushbuttons may be turned back on if required for departure.

If any EICAS 'ENG DEICE FAIL' annunciation is observed, or if system normal inflate and deflate cycling is not observed: The system shall be considered inoperative. Prior to further flight, the detailed inspections required by paragraph (g) of this AD must be accomplished.

If no discrepancy with the de-icing boots is found during these inspections, the de-icing system may be inoperative for a period of time not to exceed that specified in the DO-328 Master Minimum Equipment List (MMEL). Flight into known or forecast icing conditions is prohibited."

## **Modification of the Engine Air Intake De-icing System**

(f) Within 60 flight hours after the effective date of this AD: Modify the engine air inlet de-icing system (including a one-time detailed inspection and a debonding/delamination and leakage inspection) by doing all the actions (including any applicable corrective action) per the Accomplishment Instructions of Dornier Service Bulletin SB-328-71-125, Revision 3; and by doing all the actions per the Accomplishment Instructions of Dornier Service Bulletin SB-328-71-122, Revision 1; both dated May 10, 1999. Do any applicable corrective action before further flight per the applicable service bulletin.

**Note 2:** The de-icing boots approved for installation on the modified engine inlet assembly are specified in paragraph 3., "Material Information," of the Accomplishment Instructions of Dornier Service Bulletin SB-328-30-432, dated April 26, 2002.

**Note 3:** Dornier Service Bulletin SB-328-71-122, Revision 1, dated May 10, 1999, references Westland Aerospace Limited Service Bulletin SB-WAL328-71-122, dated September 25, 1995, as an additional source of service information for modification of the air intake ducts; and Dornier Service Bulletin SB-328-71-125, Revision 3, dated May 10, 1999, references Westland Aerospace Limited Service Bulletin SB-WAL328-71-125, Revision 1, dated September 25, 1995, as an additional source of service information for installation of the cover plate of the bypass duct outlet.

### **Repetitive Inspections**

(g) Within 60 flight hours after accomplishment of paragraph (f) of this AD: Do a detailed inspection of the engine air inlet de-icing boots to find discrepancies (including flat or soft spots in concave sections, defects on the de-icing boots, or improper sealing), per paragraph 2.B.1. of the Accomplishment Instructions of Dornier Service Bulletin SB-328-30-432, dated April 26, 2002. Do any applicable corrective action before further flight per the service bulletin. Repeat the inspection thereafter at intervals not to exceed 60 flight hours.

(h) Within 400 flight hours after accomplishment of paragraph (f) of this AD: Do a debonding/delamination and leakage inspection of the engine air inlet de-icing boots by doing all the applicable actions per the Accomplishment Instructions of Dornier Service Bulletin SB-328-30-432, dated April 26, 2002. Do any applicable corrective action before further flight per the service bulletin. Repeat the inspection thereafter at intervals not to exceed 400 flight hours.

(i) Initiation of the repetitive inspections required by paragraphs (g) and (h) of this AD terminates the repetitive inspections required by paragraphs (b) and (c) of this AD.

### **No Reporting Required**

(j) Where Dornier Service Bulletin SB-328-30-432, dated April 26, 2002, describes procedures for completing a reporting sheet with inspection results, this AD does not require that action.

### **Alternative Methods of Compliance**

(k)(1) In accordance with 14 CFR 39.19, the Manager, International Branch, ANM-116, FAA, Transport Airplane Directorate, is authorized to approve alternative methods of compliance for this AD.

(2) Alternative methods of compliance, approved previously in accordance with AD 95-04-51, amendment 39-9179, are not considered to be approved as alternative methods of compliance with this AD.

### **Incorporation by Reference**

(1) Unless otherwise specified in this AD, the actions shall be done in accordance with the service bulletins listed in Table 1 of this AD, as applicable:

**TABLE 1.—INCORPORATION BY REFERENCE**

<b>Service bulletin</b>	<b>Revision</b>	<b>Date</b>
Dornier Alert Service Bulletin ASB-328-71-006	1	February 16, 1995.
Dornier Service Bulletin SB-328-30-020	Original	March 17, 1994.
Dornier Service Bulletin SB-328-30-432	Original	April 26, 2002.
Dornier Service Bulletin SB-328-71-122	1	May 10, 1999.
Dornier Service Bulletin SB-328-71-125	3	May 10, 1999.

(1) The incorporation by reference of the service bulletins listed in Table 2 of this AD is approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51:

**TABLE 2.—NEW SERVICE BULLETINS FOR INCORPORATION BY REFERENCE**

<b>Service bulletin</b>	<b>Revision</b>	<b>Date</b>
Dornier Service Bulletin SB-328-30-432	Original	April 26, 2002.
Dornier Service Bulletin SB-328-71-122	1	May 10, 1999.
Dornier Service Bulletin SB-328-71-125	3	May 10, 1999.

(2) The incorporation by reference of the service bulletins listed in Table 3 of this AD was approved previously by the Director of the Federal Register as of April 6, 1995 (60 FR 15037, March 22, 1995):

**TABLE 3.—SERVICE BULLETINS PREVIOUSLY INCORPORATED BY REFERENCE**

<b>Service bulletin</b>	<b>Revision</b>	<b>Date</b>
Dornier Alert Service Bulletin ASB-328-71-006	1	February 16, 1995.
Dornier Service Bulletin SB-328-30-020	Original	March 17, 1994.

(3) Copies may be obtained from AvCraft Aerospace GmbH, P.O. Box 1103, D-82230 Wessling, Germany. Copies may be inspected at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741-6030, or go to: [http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

**Note 4:** The subject of this AD is addressed in German airworthiness directives 1995-156/3, dated July 1, 1999; and 2002-256, dated September 5, 2002.



**Effective Date**

(m) This amendment becomes effective on November 17, 2004.

Issued in Renton, Washington, on September 30, 2004.

Kevin M. Mullin,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 04-22562 Filed 10-12-04; 8:45 am]

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